

fw



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,313	08/21/2001	YeYi Wang	M61.12-0355	7479

7590 04/15/2005

Theodore M. Magee
WESTMAN CHAMPLIN & KELLY
900 South Second Avenue
International Centre, Suite 1600
Minneapolis, MN 55402-3319

EXAMINER

SHORTLEDGE, THOMAS E

ART UNIT PAPER NUMBER

2654

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/934,313	Applicant(s) WANG, YEYI	
	Examiner Thomas E Shortledge	Art Unit 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11, 12, 17, 18, 21-24, 26-28 is/are rejected.
- 7) ☒ Claim(s) 8-10, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/16/2002</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 8-10, and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The following is a statement of reasons for the indication of allowable subject matter:

Claim 8 recites determining if a child node of the non-terminal to be deleted does not define another non-terminal in the semantic description language grammar.

Hunt et al. teaches rules within a grammar that have enabling conditions allowing them to be turned on and off, however, Hunt et al. does not teach finding the child nodes, and deleting the non-terminal based on the definitions of the child node.

Claim 9 recites determining if a child surface semantic non-terminal in the context free grammar does not define another non-terminal in the semantic description language, then if the it does not define another, deleting the child surface semantic non-terminal.

Hunt et al. teaches rules within a grammar that have enabling conditions allowing them to be turned on and off, however, Hunt et al. does not teach finding the child nodes, and deleting the non-terminal based on the definitions of the child node.

Claim 14 recites changing both a non-terminal in the semantic description language and a non-terminal in the context-free grammar.

Hunt et al. teaches rules within a grammar that have enabling conditions allowing them to be turned on and off, however, Hunt et al. does not teach deleting a non-terminal from both the semantic description language, and the context-free grammar.

Claims 10 and 15 would be allowable since it is dependent on an allowable claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 11-12, 17-18, 21-24, and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunt et al. (6,374,226).

As to claim 1, Hunt et al. teach:

identifying a set of surface semantic non-terminals from user input using a context-free grammar, (a recognition grammar for identifying the objects within the input, where the grammar is able to recognize the controlling objects from the non-controlling objects, col. 4, lines 25-30, and 35-40);

using a semantic description language grammar that describes relationships between semantic non-terminals to identify a semantic parse based in part on the identified semantic non-terminals, (parsing the input into a parse tree by comparing the result text from the recognizer against a grammar indicated by the result, col. 6, lines 28-32);

receiving an instruction to change the semantic description (grammar rule) language grammar, (each rule within the grammar has an enabling condition, defining when to enable the rule, col. 5, lines 7-10), and

changing the semantic description language grammar based on the instruction (enabling or disabling the rule based on the rule condition, col. 5, lines 7-10).

As to claim 2, Hunt et al. teach changing the semantic description language grammar comprises deactivating a semantic entity in the grammar such that the semantic entity remains in the grammar but is not used to identify semantic parses,

Art Unit: 2654

(each rule within the grammar has an enabling condition, defining when to enable or disable the rule, col. 5, lines 7-10).

As to claim 3, Hunt et al. teach changing the semantic description language grammar comprises activating a semantic entity in the grammar that has previously been deactivated, (each rule within the grammar is able to be enabled or disabled based on the enabling conditions within the rule, (col. 5, lines 7-10). It would be necessary if a rule was once disabled, and the condition changes to enable the rule, a once disabled rule would become enabled).

As to claim 4, Hunt et al. teach changing the semantic description language grammar comprises combining a second semantic description language grammar with the semantic description language grammar, (linking rules within more than one recognition grammars, col. 5, lines 61-62).

As to claim 5, Hunt et al. teach changing the semantic description language grammar comprises inserting a semantic entity into the semantic description language grammar, (incorporating a rule within one grammar into a rule of another based on their rule definitions, col. 6, lines 5-7).

As to claim 11, Hunt et al. teach:

receiving an instruction to change a grammar used in semantic parsing of text, (each rule within the grammar has an enabling condition, defining when to enable the rule, col. 5, lines 7-10);

accessing a stored grammar formed through the combination of a context-free grammar that links text to semantic non-terminals and a semantic description language grammar that links semantic non-terminals to each other, (a recognition grammar for identifying the objects within the input, where the grammar is able to recognize the controlling objects from the non-controlling objects, (col. 4, lines 25-30, and 35-40), and parsing the input into a parse tree by comparing the result text from the recognizer against a grammar indicated by the result, col. 6, lines 28-32) and,

changing the stored grammar based on the received instruction (enabling or disabling the rule based on the rule condition, col. 5, lines 7-10).

As to claim 12, Hunt et al. teach changing the stored grammar comprises changing the stored grammar comprises changing only the semantic description language grammar, (enabling or disabling a rule with a grammar, where only the rule with the correct conditions is changed, col. 5, lines 7-12).

As to claim 17, Hunt et al. teach changing the stored grammar comprises inserting a single rule for a non-terminal in the context-free grammar, (incorporating a rule within one grammar into a rule of another based on their rule definitions, col. 6, lines 5-7).

As to claim 18, Hunt et al. teach:

receiving an instruction to change a rule that defines a non-terminal in a semantic grammar (each rule within the grammar has an enabling condition, defining when to enable the rule, col. 5, lines 7-10);

changing the rule without affecting other rules that define the non-terminal (enabling or disabling a rule with a grammar, where only the rule with the correct conditions is changed, col. 5, lines 7-12);

using the semantic grammar after the change to form a semantic parse of the input text (parsing the input by comparing the result text from the speech recognizer against a grammar that is indicated by the result, col. 6, lines 27-33).

As to claim 21, Hunt et al. teach:

identifying possible semantic structures for the text, (a recognition grammar for identifying the objects within the input, where the grammar is able to recognize the controlling objects from the non-controlling objects, col. 4, lines 25-30, and 35-40);

retrieving a focus structure (rules within a grammar) that indicates an expected semantic structure, (a set of rules within a grammar indicate the objects that will be identified by the recognition grammar, col. 6, lines 61-64);

returning only those semantic structures that correlate to the focus structure, (passing on the portion of the text matching the referred rule, col. 6, lines 66-67).

As to claim 22, Hunt et al. teach before identifying a possible semantic structure for the text, forming the focus structure, (the recognition grammar is located into the speech recognizer, where the speech recognizer is a permanent structure within the embodiment, (col. 6, lines 61-65). It would be inherent that since the speech recognizer is a permanent structure, the recognition grammar within the speech recognizer would also be permanent).

As to claim 23, Hunt et al. teach forming the focus structure comprises forming the focus structure based on a dialogue state, (only the rules that match the input are used, and passed along, col. 6, lines 62-63).

As to claim 24, Hunt et al. teach returning only those semantic structures that correlate to the focus structure comprises only returning those semantic structures that completely define a non-terminal in the focus structure, (only the portions of the test that has rules matching the rules found within the recognition grammar are passed on, col. 6, lines 64-67).

As to claim 26, Hunt et al. teach:

parsing a text to form candidate semantic parses, (a recognition grammar for identifying the objects within the input, where the grammar is able to recognize the controlling objects from the non-controlling objects, (col. 4, lines 25-30, and 35-40). It

would be inherent that since the grammar is breaking up the text, parsing would be completed);

comparing the candidate semantic parses to a focus parse, (a set of rules within a grammar indicate a the objects that will be identified by the recognition grammar, col. 6, lines 61-64);

giving preference to a candidate semantic parse that best matches the focus parse, (parsing the input by comparing the result text fro the speech recognizer against a grammar that is indicated by the result, col. 6, lines 27-33).

As to claim 27, Hunt et al. teach giving preference to a candidate semantic parse comprises returning only the candidate semantic parse that best matches the focus parse, (only the portions of the test that has rules matching the rules found within the recognition grammar are passed on, col. 6, lines 64-67).

As to claim 28, Hunt et al. teach giving preference to a candidate semantic parse comprises giving preference to a candidate semantic parse that fully defines a non-terminal in the focus parse (only the portions of the test that has rules matching the rules found within the recognition grammar are passed on, col. 6, lines 64-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6,7,13,16,19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt et al. as applied to claims 1,18,21, and 26.

As to claim 6, Hunt et al. suggest changing the semantic description language grammar comprises deleting a semantic entity from the semantic description grammar, (disabling a rule based on the condition of the rule, (col. 5, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time of the invention that once a condition disabled the rule, the rule could be deleted from the grammar to decrease the size of the grammar and increase the speed of the recognizer).

As to claim 7, Hunt et al. suggest deleting a semantic entity comprises deleting a non-terminal (object) from the semantic description language grammar (disabling a rule within a grammar, where each rule represents a object recognized by the grammar, (col. 5, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time of the invention that once a rule is disabled, the rule could be deleted from the

grammar to decrease the size of the grammar and increase the speed of the recognizer).

As to claim 13, Hunt et al. suggest receiving an instruction to change the grammar comprises receiving an instruction to change a non-terminal in the semantic description language grammar, (disabling a rule within a grammar, where each rule represents a object recognized by the grammar, (col. 5, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time of the invention that once a rule is disabled, the rule could be deleted from the grammar to decrease the size of the grammar and increase the speed of the recognizer).

As to claim 16, Hunt et al. suggest changing the stored grammar comprises deleting a single rule associated with a non-terminal in the context-free grammar, (disabling a rule based on the condition of the rule, (col. 5, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time of the invention that once a condition disabled the rule, the rule could be deleted from the grammar to decrease the size of the grammar and increase the speed of the recognizer).

As to claim 19, Hunt et al. suggest changing a rule comprises deleting a rule, (disabling a rule based on the condition of the rule, (col. 5, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time of the invention that once a

Art Unit: 2654

condition disabled the rule, the rule could be deleted from the grammar to decrease the size of the grammar and increase the speed of the recognizer).

As to claim 20, Hunt et al. teach changing a rule comprises adding a rule, (incorporating a rule within one grammar into a rule of another based on their rule definitions, col. 6, lines 5-7).

As to claim 25, Hunt et al. teach returning only those semantic structures that correlate to the focus structure further comprises only returning those semantic structures that span all of the text, (the portions of the test that has rules matching the rules found within the recognition grammar are passed on, (col. 6, lines 64-67). It would be necessary that if the complete input were a match to rule in the grammar, the complete input would be passed along).

As to claim 29, Hunt et al. teach giving preference to a candidate semantic parse further comprises giving preference to a candidate semantic pares that spans the entire text, (the portions of the test that has rules matching the rules found within the recognition grammar are passed on, (col. 6, lines 64-67). It would be necessary that if the complete input were a match to rule in the grammar, the complete input would be passed along).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yuji et al. (5,099,425), Monaco (6,434,523), and Schabes et al. (5,475,588).

Yuji et al. teach rewriting semantic structures based on the characteristics of the input.

Monaco teaches editing or adding new objects to a grammar specification language.

Schabes et al. teach converting a context-free grammar into a lexicalized form called lexicalized context-free grammar, where in the process entities can be added or removed.

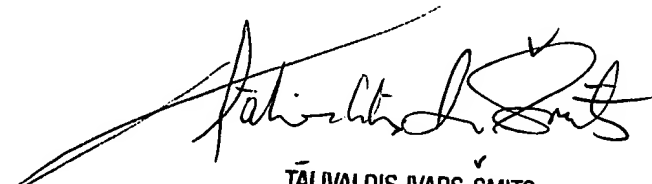
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas E Shortledge whose telephone number is (571)272-7612. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on (571)272-7628. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2654

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TS
3/28/05



TĀLVALDIS IVARS SMITS
PRIMARY EXAMINER